Release Notes 3.3.0
(January 2003)

These release notes include the updates to view_hdf since the release of the User's Guide Version 3.0.

1.0 Installation

The view_hdf tool adds two more files: check_gif.gif and check_png.png, to test the availability of supporting the Graphics Interchange Format (GIF) or the Portable Network Graphics (PNG) file types.

The view_hdf tool is currently available for the SGI IRIX and Sun Solaris operating systems. The current version uses a shared library for certain functions that are not available through standard IDL. This shared library is only required if the data file is a CERES BDS granule.

IDL versions prior to version 5.2.1 are not supported for this release.

2.0 Main Menu

(1) "File": Two items were added into "Change Preferences" option. They are:

   (a) "Graphic File Directory": Specify the output directory for creating GIF or PNG files.

   (b) "Menu Order": Set the order to display options in Graphic menu and Select Function menu. There are three options.

      (i) "Auto": Use the current order which is based on the functions.
      (ii) "Alphabetic": Use alphabetical order.

(iii) "Favorite": Display user's selected options at the beginning of the menu. When this option is selected, a window, as shown in Fig. 2-1, pops up with the available options. The user selects the most used options to put at the top of the menu and clicks done. The options will display in alphabetical order at the beginning of the menu followed by the other options.

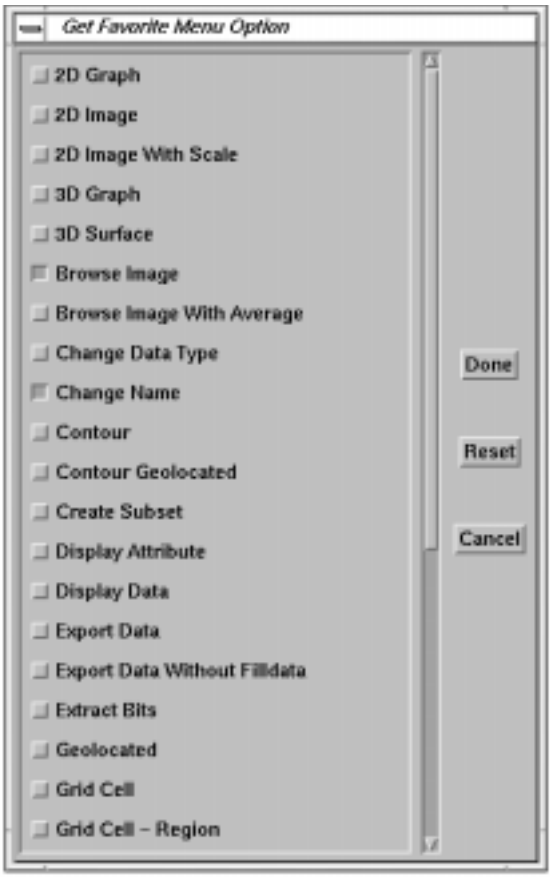

Fig. 2-1. Get Favorite Menu Order Menu

(2) "Curve Fit": Two options were added into the Curve Fit Output Options Window. The new window is shown in Fig. 2-2. The two new options are:

(a) Display the original data set on the plot ("Do you want to plot the data?"). The default is "No".

(b) Display the curve fit results with all the data points ("Display all data points:"). The user specifies the number of points to plot using the curve fit equation by setting this option to "No" and by specifying the number of points in the "Number of points" field. The default is "Yes".

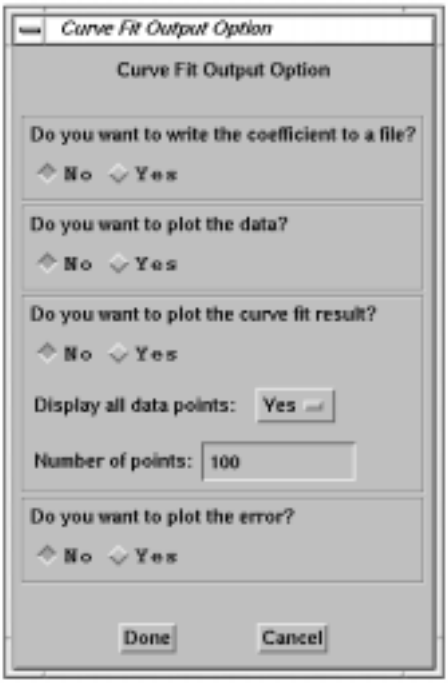

Fig. 2-2. Curve Fit Output Options Window

(3) "Style": The "Line Thickness" and the "Data Color" options are added into this menu.

(a) "Line Thickness": Select the thickness of line that is used to join data points. The default is 1.0.

(b) "Data Color": Select this option to choose a different color from the foreground color to display the data on the plot. When this option is selected, a window, as shown in Fig. 2-3, pops up for selecting the color. Select the color by either entering the color index in the field or click on the color bar. Click the "Done" button to select or click the "Cancel" button to cancel this option.

Fig. 2-3. Select Data Color Window

(4) "Settings": The "Map", "Grid Start", "Color Bar", and "Style" options were modified to add more settings. Three new options were added into this menu. They are: "Multiple Variables Style", "Browse Image Plot Type", and "Encapsulated Postscript". The new menu is shown in Fig. 2-4. The description of these options are:

Fig. 2-4. Settings Menu

(a) "Map": The new Map Settings Window is shown in Fig. 2-5. The new fields added include:

(i) "Projection": A "Satellite" option is added into the list. The location of the map center, Latitude and Longitude fields, represent the sub-satellite point.

(ii) "Draw Whole Map": Display manual range setting data on a whole map projection. By setting this option to "No", only the specified range of the map is displayed. By setting this option to "Yes", the specified range of data is displayed on a whole map projection. The default is "No".

(iii) "Show Border": Draw a border around the map. By setting this option to "No", the border around the map is not drawn. The default is "Yes".

Fig. 2-5. Map Settings Window

(iv) "Display Grid Lines": Display the meridian lines on the map. By setting this option to "No", the meridian lines are not drawn. The default is "Yes".

(v) "Grid Thickness": This setting is the line thickness used to draw the meridian lines. The default is 1.0.

(vi) "Contour Type": Display the Contour Geolocated plot with a contour plot or an image plot. The default is "Contour".

(vi) "Parameters For Satellite Projection": Three parameters are needed to define when "Satellite" projection is selected. They are:

1. "Altitude": The distance of the point of perspective from the center of the globe, in kilometers (km). The default is 6371 km.
2. "Rotation": The angle, expressed in degrees clockwise from north, of the rotation of the projection plane. The default is 0 degrees.
3. "Downward Tilt": Downward tilt of the camera, in degrees from the new horizon relative to the spacecraft. The default is 0 degrees. If both "Rotation" and "Downward Tilt" are set to 0, a Vertical Perspective projection results.

(b) "Grid Start": The new Grid Start Setting Window is shown in Fig. 2-6. "Latitude Grid Start" was added. This option specifies the first grid of the data set for "Grid Contour" and "Grid Cell" from either "North to South" or "South to North". The default is "North to South" (see Section 4.2 of the User's Guide).

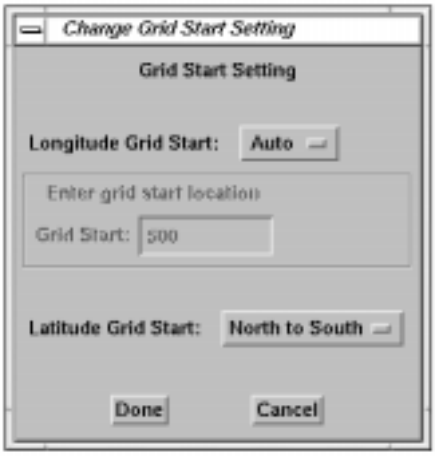

Fig. 2-6. Grid Start Setting Window

(c) "Color Bar": The new Color Bar Setting Window is shown in Fig. 2-7. The new items added for this option are:

(i) A "Log Discrete" option was added into the "Color Bar" option. This option uses log10 scale for scaling data. If all the data are less than 1, this option will switch to the "Discrete" option.

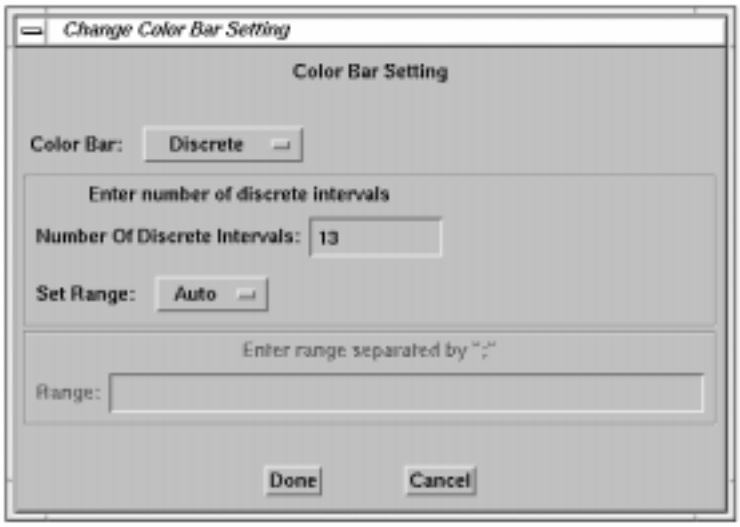

Fig. 2-7. Color Bar Setting Window

(ii) A "Set Range" field was added for the "Discrete" option. If "Auto" option is selected, the value for each interval is uniformly divided based on the number of discrete intervals. If "Manual" option is selected, the values of intervals, separated by either ";" or ",", are specified by the user. The number of discrete intervals are calculated from the input values. The default is "Auto".

(d) "Style": The new "Style Setting Window" is shown in Fig. 2-8. Two fields were added into this window.

(i) "Line Thickness": Specify the line thickness used to display data when Line style is selected.

(ii) "Color": Select this field to choose a different color from the foreground color to display the data on the plot. Select the color by either entering the color index in the field or by clicking on the color bar. The default is the foreground color.

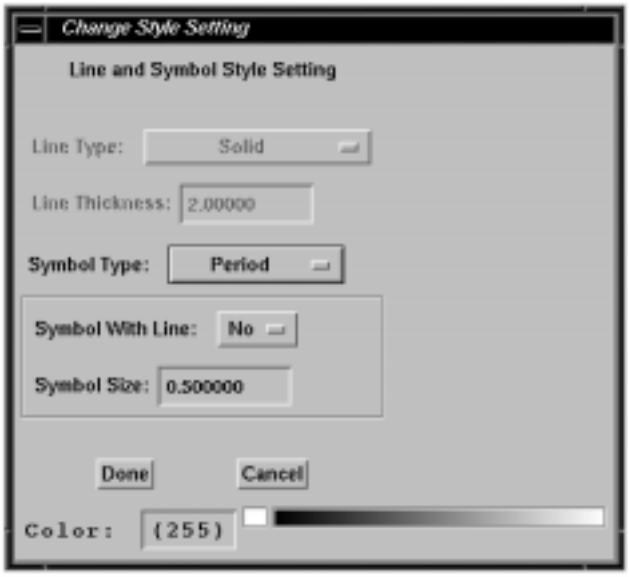

Fig. 2-8. Style Setting Window

(e) "Multiple Variables Style": When plotting multiple variables plot, use this option to specify the style of data to be displayed on the plot. A window, as shown in Fig. 2-9, will pop up for setting the options. With the "Default" option, the line style or the symbol style is used in the order sequence that is specified in the "Style" menu. With the "Manual" option, the style is specified for each data set. During plotting for each data set a window, as shown in Fig. 2-10, will pop up for selecting the style of the data set to be plotted.

Fig. 2-9. Multiple Variables Style Setting Window

Select a combination of line and/ or symbol to display different data set. After the initial setting of the style, the same sequence of setting will be used for the latest plot.

To reset the "Multiple Variables Style", set the "Reset Style Setting" option in Fig. 2-9 to "Yes". The Select Variable Style Setting Window will pop up for each data set to reset the style.

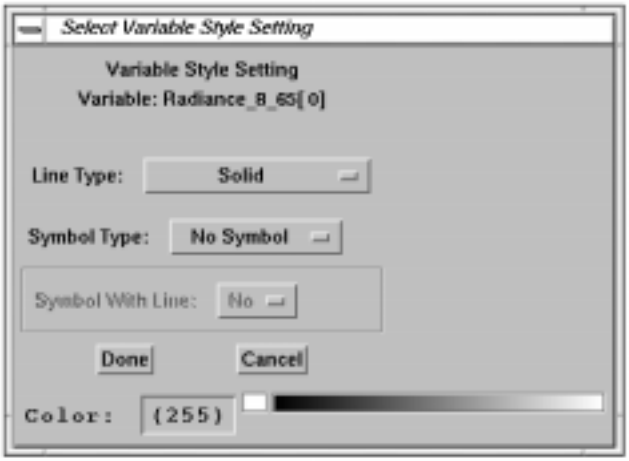

Fig. 2-10. Select Variable Style Setting Window

(f) "Browse Image Plot Type": Select how a browse image is created. The three options, as shown in Fig. 2-11, are

(i) "Plot As Image": A two-dimensional data set will be converted into two-dimensional uniform gridded data set and displayed as an image. This is the default.

(ii) "Plot By Grid Cells": The gridded data is displayed region by region.

(ii) "Plot By Points": The data set is plotted point by point.

Fig. 2-11. Browse Image Plot Type Setting Window

(g) "Encapsulated Postscript": Specify the setting for creating an encapsulated postscript output file. The window for this option is shown in Fig. 2-12. The fields include:

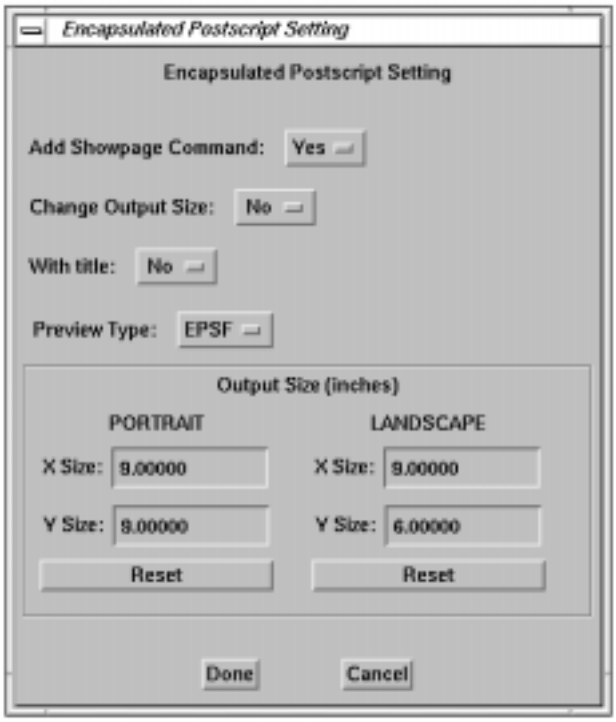

Fig. 2-12. Encapsulated Postscript Setting Window

(i) "Add Showpage Command": A "showpage" command is not added into the encapsulated postscript (EPS) file because an EPS file is usually imported into a word processor. But some graphics or print commands need the "showpage" command in the file to make them work properly. Setting "Yes" in this field will check the existence of a "showpage" command. If the command does not exist, the "showpage" command is added into the file. By setting "No" in this field, the check is not performed. The default is "Yes". Note: if the file is too long, it will take a while to check the command.

(ii) "Change Output Size": By setting this option to "Yes", the size of output will be adjusted to eliminate spaces between the title and the plot and between the plot and the color bar. By setting this option to "No", the specified output sizes (portrait or landscape) are used. The default is "No".

(iii) "With Title" By setting "Yes" in this field, the main title of the plot is written into the plot. By setting "No" in this field, the main title is not written. The default is "Yes".

(iv) "Preview Type": The type of preview is written to the file. The options are:

1. "No": No preview is written to the file.
2. "EPSI": An EPSI preview is written to the file. This type of preview can be viewed with the UNIX **xv** and **ghostview** commands, but it cannot be viewed in Windows **MS Word** program.
3. "EPSF": An EPSF preview is written to the file. This option is valid only for IDL version 5.3 and later. This type of preview can be viewed in Windows **MS Word,** but it cannot be viewed with UNIX **xv** and **ghostview** commands.

The default of this option is "EPSI".

(v) "Output Size": Specify the output size of EPS file. The sizes are in inches. For portrait output, the default size is 5.4 X 7.0. For Landscape output, the default size is 9.0 X 6.95. Note: Select the "No" option in the "Change Output Size" field to make this option operate.

(5) "INPUT": A "Multi Files" option was added into the "Range Type" field. Select this option to read a same SDS data set or Vdata set from multiples files which have the same name format with the last several digits as increment. For example, if the user wants to read the SDS1 data set from files with a filename as hdf_file_01, hdf_file_02,... a window, as shown in Fig. 2-13, pops up for entering the settings. The settings include:

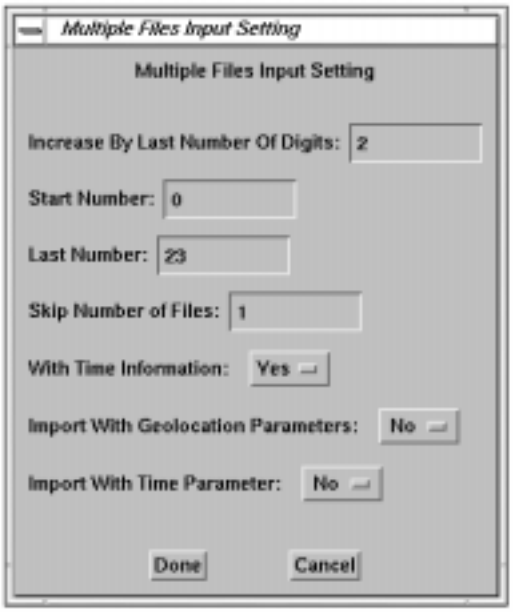

Fig. 2-13. Multiple Files Input Setting Window

(a) "Increase By Last Number of Digits": Number of digits at the end of the filename as an increment. The default is 2.

(b) "Start Number": The starting number of these digits to be read. The default is 0.

(c) "Last Number": The last number of these digits to be read. The default is 23.

(d) "Skip Number": The number of files in the sequence to be skipped. The default is 1.

(e) "With Time Information": If the time parameter is available and recognized in the file, it can be attached to the data set such that the plot will show the time range on the title. By setting this field to "Yes", the time information is attached. The default is "Yes".

(f) "Import With Geolocation Parameters": By setting this field to "Yes", the geolocation parameters are imported to the Current Subsets area at the same time if they are available and recognized (see Section 5.0 of the User's Guide). If the data will be plotted on a map projection, by setting this option to "Yes", these parameters do not need to import separately. If this field is set to "Yes", it will be automatically set to "No" after the geolocation parameters are read. If the user wants to make a plot with another data set

with the same data range, the geolocation parameters do not need to be imported again. The default is "No". Note: Since the data are from multiple files, it is difficult to read in the geolocation parameters automatically. The user will be asked to select the geolocation parameters from the Current Subset list.

(g) "Import with Time Parameter": By setting this field to "Yes", the time parameter is imported into the Current Subsets area if it is available and recognized (see Section 5.0 of the User's Guide). The time is converted to seconds of the day. The default is "No".

With the "Range Type" setting on the "Multi Files" option, open any file in the series of files like opening an HDF file. Click on the desired SDS or Vdata from the INPUT area, a window, as shown in Fig. 2-14, pops up to display the multiple files settings. Click the "OK" button to read the data if all the settings are correct. Click the "Cancel" button to cancel the process. After reading the data set from all of the files, a Subset Data window, as shown in Fig. 2-15, pops up with Starting, Ending, and Increment fields for each dimension of the data. A range of data can then be selected to be imported. If the dimensions of the geolocation parameters and the time parameter are not the same, this window pops up again for these parameters; otherwise, these parameters are imported with the same range as the data set. Click the "Done" button after finishing the input range to import data. The name of the data set, as well as the geolocation parameters and/or time parameter if they are selected, will display on the Current Subsets area. This data set can be accessed from the current subset list. Note: The filename displayed on the plot in the title is the opened filename.

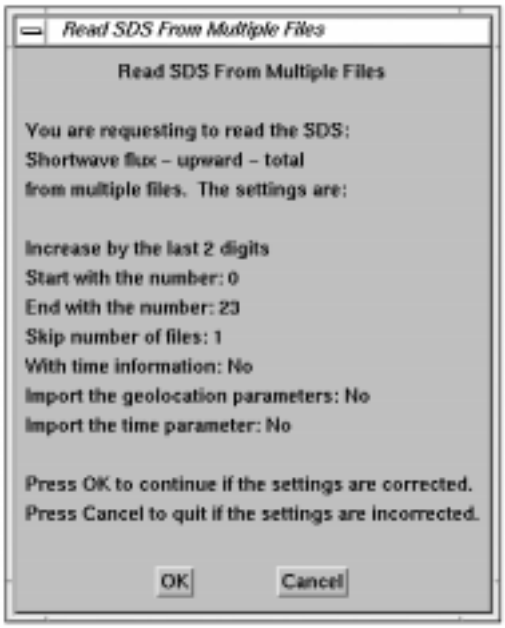

Fig. 2-14. Read Data From Multiple Files Window

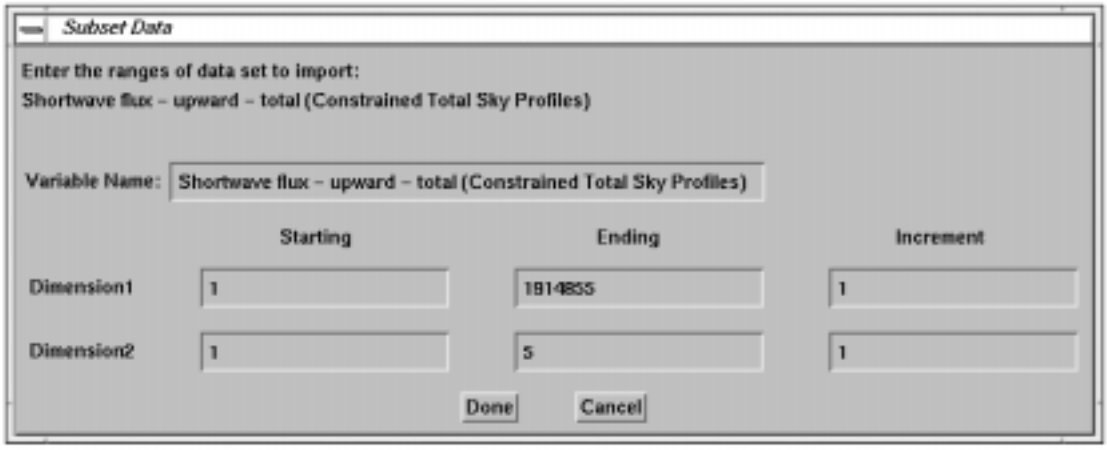

Fig. 2-15. Multiple Files Data Range Input Window

3.0 Select Function Menu

(6) "Change Data Type": The IDL versions 5.2 and later support unsigned integers, so the Change Data Type Window for IDL version 5.2 and later will be displayed on the screen as shown in Fig. 3-1.

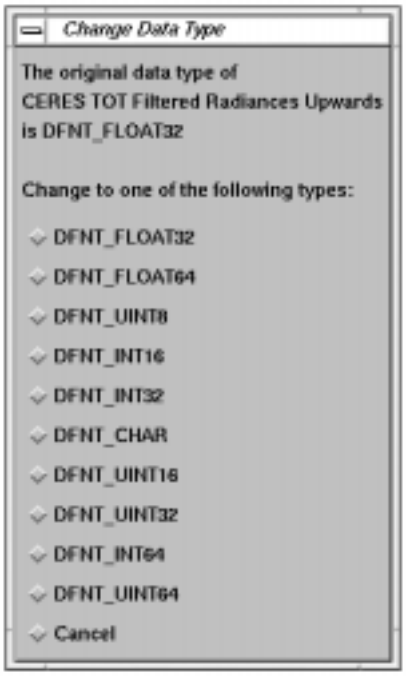

Fig. 3-1. Change Data Type Window

4.0 Plot Window Menu

(7) "Overlay": This option lets the user overlay another data set on an "XYZ Plot", "Scatter Contour Plot", "Grid Contour", "Grid Cell", "Grid Cell - Region", "XYZ Graph", "Geolocated", and "Contour Geolocated" graphic type plots. When one of these graphic types is selected, this button will be activated. Before overlaying another data set on one of these plots, the overlay data set and its X and Y parameters need to be imported into the Current Subsets area. Click the "Overlay" button, a window, as shown in Fig. 4-1, pops up for selecting the overlay parameters. They are:

Fig. 4-1. Overlay Variable Setting Window

(a) "X Field": X parameter for the overlay data. The longitude is an example for a "Geolocated" plot.

(b) "Y Field": Y parameter for the overlay data. The latitude is an example for a "Geolocated" plot.

(c) "Z Field": Data set that will be overlaid on the plot.

(d) "Data Range": Use the same or different data range from the original data set. If "Different" is selected, the data range of the overlay data is set from the minimum to the maximum of the overlay data set. The default is "Same".

(e) "Line Type": The line type used to join data points.

(f) "Line Thickness": The thickness of the line that is used to join data points.

(g) "Symbol Type": Select line or symbol to display data points. The "No Symbol" option uses a line to display data. This is the default option.

(h) "Symbol With Line": Select to use a line to connect all the symbols if a symbol is selected to mark the data points. The default is "No".

(i) "Symbol Size": Select the size of the symbol to mark the data points. The default is 1.0.

(j) "Number of Colors": Use a single color to display data points or use multiple colors to show different values of the data points. The default is "Single".

(k) "Adjust X and/or Y data": By setting this field to "Yes", the X and/or Y values of the overlay data set can be adjusted. A window, as shown in Fig. 4-2, will pop up after the overlay data is plotted. The fields in this window are:

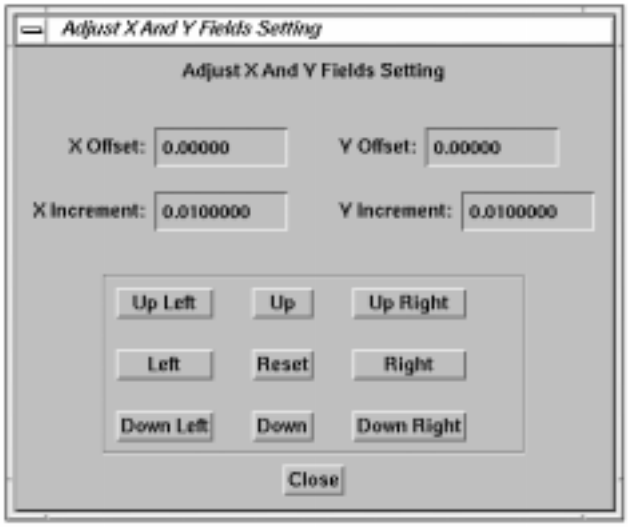

Fig. 4-2. Adjust X and Y Fields Setting Window

(i) "X Offset": The offset value of X parameter from the original X position. A negative value means the X values move left, while a positive value means the X values move right.

(ii) "Y Offset": The offset value of Y parameter from the original Y position. A negative value means the Y values move down, while a positive value means the Y values move up.

(iii) "X Increment": The increment or decrement value of the X parameter for each time the "Right" or "Left" button is pressed. This value can be changed during the process.

(iv) "Y Increment": The increment or decrement value of the Y parameter for each time the "Up" or "Down" button is pressed. This value can be changed during the process.

(v) "Direction Buttons": These buttons control the direction movement of the overlay data set. The middle button is "Reset" which resets the X offset and Y offset to zero; i.e., the original position of X and Y parameters.

Click the "Close" button if the adjustment is done. By setting the "Adjust X and/or Y data" field in Fig. 4-1 to "No", the adjustment will not be performed. The default is "No".

(l) "Reset the offset": By setting this field in Figure 4-1 to "No", the value of "X Offset" and the value of "Y Offset" uses the last values and the overlay data are plotted with these offsets. By setting this field to "Yes", the value of "X Offset" and the value of "Y Offset" are reset to zero and the overlay data are plotted with the original X and Y values. The default is "No".

(m) “Color”: Select the color to display the overlay data points if the “Number of Colors” field is set to “Single”. Select the color either by entering the color index or by clicking on the color bar.

(n) “Done”: Click this button to start plotting the overlay data set on the plot after entering all the fields.

(o) “Remove”: Remove the overlay data set from the plot, i.e., display the original plot again.

(p) “Close”: Close this window.

(q) “Cancel”: Cancel this process.